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TRUSTS AND PRICES

It is not the purpose of the writer to add another page to the growing volume of speculation on the Trust problem. The two thousand or more pages of expert opinion given before the Industrial Commission read very much like the usual expert testimony in criminal trials, in that the witnesses contradict on every point one another and not infrequently themselves. What we really need, to enlighten the discussion, is facts, not opinions. In this respect the Industrial Commission has performed a valuable service. Through its expert agent, Professor Jenks, it has collected a fund of reliable statistical data on prices.

We propose to consider in the following pages the effect of combination on the prices of raw material and finished products.

I.

The Industrial Commission concludes, in its Review of Evidence on the subject of combinations, that the latter are in a position to buy their raw material cheaper than their competitors. The Commission is inclined, however, to minimize the effects of this advantage. It is shown, *e. g.*, that the saving of the Sugar Trust on this item does not exceed one-sixteenth of a cent per pound¹; it appears, however, from the testimony, cited further, that if the competitors of the trust find it "difficult to secure a customer, they will cut the price perhaps one-sixteenth of a cent per pound. One or two of the chief competitors seem to be forced to put their prices quite frequently at one-sixteenth of a cent below that of the American Sugar Refining Company."² It would follow that this saving of "not more than one-sixteenth of a cent per pound" would enable the American Sugar Refining Company to meet the cut and still

¹"Report of the Industrial Commission," Vol. I, Review of Evidence, p. 16.

²*Ibid.*, p. 18.

retain the former advantage over its competitors. The difference is, accordingly, one not to be treated as a negligible quantity.

The figures published on the subject of the prices of crude materials by the Commission relate only to the oil combination and have been furnished by Mr. Archbold, vice-president of the Standard Oil Company, and Mr. Boyle, editor of the *Oil City Derrick*, a witness friendly to the company. The tables confine themselves to Pennsylvania oil, which is a high grade product, and give the total amount of crude oil produced annually from 1860 to 1898, the total annual valuation of the product, the number of wells drilled by decennial periods and the estimated cost per well, from all of which the sum of \$263,968,413.75 is obtained "as the profits of the producing business for the last thirty-nine years, or an average of \$6,768,-420.86 per year."³ The result appears to be quite satisfactory, compared with the annual valuation of the product, which averaged, for the period from 1870 to 1890, in round numbers \$20,000,000, and from 1890 to 1898, about \$28,000,000.

These results are obtained, however, by combining the early period of oil production, when prices were generally high, with the later years, following the organization of the oil combination, which were marked by low prices of crude oil. Whether this was a mere coincidence, or there was a causal connection between the combination and low prices, can be ascertained only by treating each period separately. An element of uncertainty in estimates of this sort is the landed interest, which has varied, since the beginning of oil production, from one-half to one-eighth of the output. Mr. Boyle's calculation is made upon the basis of an average rental of one-fourth for the whole period 1860-1898; Mr. Archbold adopts the present rental of one-eighth throughout the period. The tendency of this assumption is to give the total an appearance more favorable to the oil producer.

As totals do not lend themselves to comparison, the figures must be reduced to averages. We first take the tables furnished by Mr. Boyle and calculate from them the averages per well drilled and per barrel of crude oil.

³ "Report of the Industrial Commission," Vol. I, Testimony, p. 434.

	1860-69.	1870-79.	1880-89.	1890-98.
I. Averages per well :				
Output, bbls.	5,589	5,427	7,548	6,819
Value	\$22,228 00	\$10,395 00	\$6,457 00	\$5,886 00
Cost :				
Drilling	4,000 00	3,000 00	2,000 00	2,000 00
Lifting, 25c. per bbl. . . .	1,397 00	1,357 00	1,887 00	1,705 00
Land interest, 25 per ct. . .	5,557 00	2,599 00	1,619 00	1,472 00
Total cost	\$10,954 00	\$6,956 00	\$5,506 00	\$5,177 00
Profit	11,274 00	3,439 00	951 00	715 00
II. Averages per bbl.:				
Price	\$3 98	\$1 92	\$0 86	\$0 87
Land interest	\$0 99	\$0 48	\$0 21	\$0 22
Cost of production	96	81	52	54
Total cost	\$1 95	\$1 29	\$0 73	\$0 76
Profit	2 03	63	13	11

In this calculation the bonus, or rental paid for holding the ground, is not considered at all. Mr. Boyle concedes that "it operates against the profits;" he concedes also that it is necessary to pay this bonus in order to pursue the business, but he thinks that "the lease is speculative" and should therefore not enter into the cost of operating.⁴

Granting, for the sake of the argument, the contention to be correct, it appears nevertheless that within the last two decades, *i. e.*, since the organization of the oil combination, the average profits of the producer have been reduced from \$3,439 to \$715 per well, or from 63 cents to 11 cents per barrel. The average price has for the last two decades remained constant, as well as the average cost of operating; that is to say, in the long run, the fluctuations within each decade, extreme as they were, affected neither the average price, nor the average cost. This stability points to an equalization of supply and demand, when taken for periods of sufficient length. The inference is sustained by a comparison of the average annual production with the total stocks on hand before and after the organization of the trust. In the following table the year 1882, in which the trust was organized, is excluded and the averages are taken by eight-year periods.

⁴ "Report of the Industrial Commission," Vol. I., Testimony, p. 435.

Period.	Average annual production.		Average stocks.		Average price.
	1000 bbls.	Percentage of increase over preceding period	1000 bbls.	Percentage of annual production.	
1874-81	14,307	. .	8,660	60	\$1 40
1883-90	23,448	64	25,832	110	86
1891-98	32,894	40	11,029	33	86

During the first period following the organization of the trust the production of crude oil increased by 64 per cent as compared with the period next preceding, which resulted in an increase of the stocks slightly above the amount of the annual output. The oil combination justly claims the credit for having brought American oil into every nook of the world; in view of this fact an increase of the output by about three-fifths, while the population of the United States increased by one-fourth, could not be termed overproduction. During the next eight-year period, however, the average annual production increased only by 40 per cent, whereas the population of the United States, according to the XIIth census returns, increased by about one-fifth; at the same time the average stocks of oil were reduced to 33 per cent of the annual production, which is equal to the output of four months; still this contraction of the output had no effect on the price. There is no evidence of either overproduction, or reduction of cost of operating. But the price of crude oil was during these years made by the trust,—this was admitted by its representatives who testified before the Industrial Commission. There is no escape from the conclusion that the fall of nearly 80 per cent in the profits per well must have come from the efforts of the trust to keep the price of crude oil down.

The average profits per well, taken for an eight-year period, do not tell the whole story, however, since a well becomes dry, as a rule, in about six months. To form a better idea of the condition of the oil producer, we shall compare the average cost of operating per barrel with the prices ruling for shorter periods. Taking the average monthly prices up to 1894 and the daily prices since 1895, as given in the Report of the Industrial Commission,⁵ and converting gallons into barrels (42 gallons = 1 bbl.), we obtain the following table:

⁵ "Report of the Industrial Commission," Vol. I, Testimony, pp. 48-50, 434-439.

Date.	Averages per barrel.				Net loss.
	Price.	Rental (= $\frac{1}{4}$).	Drilling and lifting.	Total cost.	
July, 1884	\$o 63	\$o 16	\$o 52	\$o 68	\$o o5
June to October, 1886 :					
Highest	67	17	52	69	o2
Lowest	62	15	52	67	o5
February to September, 1887 :					
Highest	67	17	52	69	o2
Lowest	59	15	52	67	o8
December, 1890	67	17	52	69	o2
April, 1891, to October, 1893 :					
Highest	71	18	54	72	o1
Lowest	51	13	54	67	16
August, 1897, to Feb., 1898 :					
Highest	71	18	54	72	o1
Lowest	63	16	54	70	o7

Thus, relying upon the figures furnished by the editor of the *Oil City Derrick*, we arrive at the conclusion that within nine years out of seventeen since the organization of the trust, the average monthly price of crude oil fell at times below the average cost of operating; such a condition continued in 1886 for five months, in 1887 for eight months, and in 1891-93 for two years and seven months in succession. Even amidst the prosperity of 1897 and 1898 the price of crude oil was for more than half a year below the cost of operating.

In the preceding table the rental is figured at one-fourth of the gross product, as estimated by Mr. Boyle; the result is not materially changed, however, if Mr. Archbold's estimate is accepted, as shown by the following table, where the rental is figured at one-eighth:

Date.	Averages per barrel.			Net loss (cost = 54 cents).
	Price.	Rental (= $\frac{1}{8}$).	Realized.	
September to December, 1891 :				
Highest	\$o 60	\$o o7	\$o 53	\$o o1
Lowest	58	o7	51	o3
February, 1892, to February, 1893 :				
Highest	60	o7	53	o1
Lowest	51	o6	45	o9
May to August, 1893 :				
Highest	59	o7	52	o2
Lowest	58	o7	51	o3

Thus, according to the showing made by a vice-president of the Standard Oil Company, there were within the space of two years, from September, 1891, to August, 1893 (both inclusive), just three months when the average price of crude oil repaid the cost of operating, viz., January, 1892, and March and April, 1893; during the rest of the time the price was from 1 to 9 cents per barrel below the cost of operating.

The question naturally arises, Why did the producer supply the market for two years in succession at prices which did not cover the cost of production? The answer is given by Mr. James W. Lee, of Pittsburg, Pa., president of three independent oil companies, and attorney for the fourth. The following is taken from his testimony before the Industrial Commission:

"Q. Perhaps you might explain to the Commission why the production could keep up under these circumstances. A. It is a speculative business. One man would come in and drill awhile, get a thousand-barrel well and grow rich. The hope of that sort of thing led men to put a great deal of money into drilling these wells. They all hoped to get large wells; they did not find them. More money has been put into the business in ten years than has been taken out of it. Still people make money often, though prices are low. There are wells that run as high as 15,000 barrels a day. Of course a man who has a well of that kind will make a large amount of money."⁶

Thus, average prices do not repay the average cost of production, which is considered by the economist; a speculator is not guided, however, by school books on Political Economy, he figures upon exceptional gains and the improvement of prices. The policy of the trust has largely contributed towards making the oil business a lottery. Says Professor Jenks:

"The independent oil producers have said much about the arbitrary acts of the Standard in fixing the prices of crude oil. The charge of arbitrary action is conceded by the Standard to be true in special cases. That organization has at times in special localities raised the price of crude oil till it has ruined a rival pipe line, which was also a buyer, and then, on the absorption of the line, has lowered it again to the great disadvantage of the oil well owners. At times, too, where it has been almost the sole buyer of crude oil, it has kept prices so low that well owners were practically compelled to sell out to it; then it has raised the price."⁷

⁶ "Report of the Industrial Commission," Vol. I, Testimony, pp. 282-283.

⁷ "The Trust Problem," pp. 155, 156.

A few instances of price fluctuations are quoted here from the tables compiled by Professor Jenks. From January to July, 1884, the price per gallon of crude oil at Oil City fell from 2.65 cents to 1.51 cents; from January to October, 1885, it went up again from 1.69 to 2.50 cents; towards the month of August of the next year it fell again to 1.48 cents. From November, 1889, to December, 1890, the price fell from 2.58 to 1.60 cents. From November, 1894, to April, 1895, it rose from 1.97 cents to 4.22 cents. From January to December, 1898, the price went up from 1.50 cents to 2.79 cents, and towards December of the next year it rose as high as 4.13 cents. The average price for 1880-89 is obtained by computation at 2.04 cents per gallon, and that for 1890-99, at 2.19 cents. Thus the fluctuations within a few months ran at times as high as 90 per cent above the average price.

This would leave little room for sound business calculations, since it was a mere matter of chance with the oil producer, in undertaking to drill a well, whether the price of crude oil would be doubled or cut by one-half.

It is the opinion of Professor Jenks that arbitrary interference with prices by the trust was limited to special localities and on the whole "produced no great effect on the entire market. . . . The greater general changes seem to have been due to the changes in supply brought about by other causes."⁸ His figures, however, justify a different conclusion. To confine ourselves to the period following after the organization of the Standard Oil Company, the depression in 1891 to 1893 is ascribed to the discovery of a new field in Pennsylvania with some of the largest wells ever known in this country. Still referring to the tables, we find that the stocks of Pennsylvania oil in 1892 were one-half those in 1882, and yet the average price in 1882 was 78½ cents, while in 1892 it was 55½ cents. In 1893 the stocks were only 5 per cent above those in 1898, and the production was 1 per cent less than in 1898, and yet the price in the latter year was 91⅛ cents, while in 1893 it was 64 cents. In 1895, "the market was largely speculative for a time,"⁹ and it was claimed "that the advance in crude oil was largely arbitrary" and intended to overthrow the independent refiners; the contention is not disputed by Professor Jenks. The decline in 1897

⁸ *Loc. cit.*, p. 156.

⁹ *Ibid.*, p. 157.

is ascribed to the opening of the West Virginia fields; yet the annual output was affected only to the extent of 1,200,000 bbls., an increase of $3\frac{1}{2}$ per cent,—and the stocks on hand were increased by a like quantity; so whereas in the preceding year they had been equal to the output of fourteen weeks, in 1897 they reached the output of sixteen weeks; this could hardly be spoken of as over-supply of the market, and yet the price fell from \$1.19 to $78\frac{3}{8}$ cents per barrel. These are all the cases cited by Professor Jenks in support of the proposition that the greater general changes in prices have been due to changes in supply, and from these cases, at least, it does not appear that supply and demand had any part in determining the price within the periods referred to.

To sum up, the fact is established by the testimony on behalf of the Standard Oil Company that the trust at times depressed the price of crude oil below the cost of production; in so far as this was done only in special localities it added to the profits of the trust, without benefiting its competitors. This answers the familiar argument that no special advantage accrues to an industrial combination from reducing the cost of raw material, since the benefit would be shared by the independent producers alike.

II.

We come next to the price of products made by trusts. The complaint against the trusts is that they have raised the prices of manufactured products and introduced the practice of local discrimination to kill competition. The answer is a "general denial."

The Industrial Commission made a thorough study of prices, confining itself to but a few articles. The Civic Federation of Chicago, in 1899, sent out interrogatories to a number of persons who were thought competent to speak on the subject. The answers received were tabulated by Professor David Kinley, of the University of Illinois; the results are reproduced in the following table:¹⁰

Prices after consolidation.	Number of answers.
Increased	452
Decreased	24
No change reported	15
Fluctuating	15
Total	506

¹⁰ "Chicago Conference on Trusts," pp. 530-533.

It is claimed in justification of the general rise of prices of finished products, that it is due to a rise in the prices of raw materials; thus, *c. g.*, the rise in the price of tinplate is explained by the rise in the prices of steel and tin. While the explanation may hold good in many cases, it merely shifts the blame from one trust to another, since the production of raw materials is also largely controlled by trusts; the fact still remains that about nine-tenths of trust-made articles increased in price. The exhaustive study made by Professor Jenks for a few selected articles leaves no doubt that the margin between the selling price and cost of material has been raised by combination. If the conditions were exceptional in these cases, it would have been easy for the combined producers of other articles to demonstrate it before the Commission by figures drawn from their books. No such testimony has been offered and the conclusions of Professor Jenks stand uncontroverted.

On the subject of local discriminations an abundance of figures is presented by the Industrial Commission. There is, in the first place, a table of monthly prices of standard white illuminating oils at New York, Chicago and Cincinnati for the fifteen-year period 1885-99; the table is given with the testimony of Mr. Archbold, and is thus above suspicion of prejudice against the Standard Oil Company.¹¹

An examination of the table shows that, as a rule, the price at Cincinnati is lower than at Chicago, and at Chicago lower than at New York, which must be accounted for by some permanent reason. Still it appears that on many occasions the situation was reversed.

Thus, oil sold cheaper at New York than at Chicago: in November, 1887; in February and August, 1888; from May to July, 1889, and in November of the same year; from March to June, 1890, and in November of the same year; in September, 1891, and from November of the same year to January, 1892; in January, May and October, 1893, and from December of the same year to February, 1894; in September of the same year.

The New York price fell below the price at Cincinnati: in September and October, 1888; from August to October, 1889, and in December of the same year; in February and March, 1893; in March, 1894, in May and June and from August to October, 1895.

¹¹ "Report of the Industrial Commission," Vol. I, pp. 547, 548; the same in the "Bulletin of the Department of Labor," No. 29, pp. 725, 726.

The Chicago price was below that at Cincinnati: in May, June and September, 1892; from April to October, 1895; in July, August and October, 1897; and in March, 1898. These fluctuations cannot be adequately accounted for by any other agency but local fluctuations of supply and demand.

In addition to this study of three important markets, extending over a number of years, the Industrial Commission has also a contemporaneous survey of over fifteen hundred local markets, representing every State in the Union and coming from towns of all varieties of size and characteristics.¹²

The information was received in reply to a schedule of inquiries which had been addressed to retail grocers throughout the United States. Four articles were selected, because of the fairly uniform quality of the product—illuminating oil, sugar, salt and Royal Baking Powder, and the grocers were requested to give the prices paid on February 15, 1901, or on the nearest day when purchases of these articles had been made. Taking illuminating oil, variation in price may proceed from one of the following causes: (1) difference in cost of production at different sources of supply, (2) freight rates, (3) cost of distribution, which is likely to be in inverse ratio to the quantity sold in any given market, (4) cartage, which is presumably higher in a great city like New York, than in a small hamlet. The following table is constructed from the data of the Commission, with a view to eliminating the first two causes of variation; all cities enumerated in the table are supplied by the Standard Oil Company from the same refinery, located at Whiting, Ind.; the last column shows the net price, after deducting freight charges; the cities are arranged in the order of their population.

It is evident from this table that neither the size of the market nor the cost of cartage offers a satisfactory explanation of the variations in the net price of oil. Here are two cities, Indianapolis and Kansas City, substantially alike in population, and yet the price at the latter is 36 per cent above that at the former. Little Rock, Ark., and Dubuque, Iowa, have also substantially the same population, and yet the price at Little Rock is 1.55 cents per gallon above that at Dubuque. Vicksburg, Miss., and Cheyenne, Wyo., are also equal in rank, and yet there is a difference of 3.1 cents per gallon, or nearly 40 per cent.

¹² "Report of the Industrial Commission," Vol. XIII. pp. 773-911.

Cities.	Population, 1900.	Gross price per gallon.	Freight per gallon.	Net price per gallon.
San Francisco, Cal.	342,782	\$0 13	\$0 05	\$0 08
Louisville, Ky.	204,731	07	00.74	06.26
Indianapolis, Ind.	169,164	05.5	00.5	05
Kansas City, Mo.	163,752	08.5	01.7	06.8
St. Paul, Minn.	163,065	08	01.3	06.7
Denver, Col.	133,859	16	04.9	11.1
Portland, Oregon	90,426	14	05	09
Seattle, Wash.	80,671	13.5	05	08.5
Des Moines, Iowa	62,139	08	01.5	06.5
Lincoln, Neb.	40,169	10	01.9	08.1
Little Rock, Ark.	38,307	11.5	01.9	09.6
Dubuque, Iowa	36,297	09	00.95	08.05
Madison, Wis.	19,164	08	00.8	07.2
Atchison, Kan.	15,729	09.5	01.7	07.8
Vicksburg, Miss.	14,834	09.5	01.5	08
Cheyenne, Wyo.	14,087	16	04.9	11.1
Sioux Falls, S. Dak.	10,266	10.5	01.8	08.7
Fargo, N. Dak.	9,589	12.5	03	09.5

On the other hand the price at Denver is precisely the same as at Cheyenne, Wyo., though the population of the former is nearly ten times as large as that of the latter. San Francisco and Vicksburg, Miss., are charged the same price, though the former has a population twenty-three times as large as the latter. Indianapolis pays the lowest price; if the increase in the size of the city carries with it increased cost of distribution, then there are at least thirteen cities, beginning with Denver, where the price ought to be lower than at Indianapolis; if, on the contrary, the larger the market, the lower are the selling expenses, then one would expect the price at San Francisco to be the lowest, whereas in reality it is 60 per cent above the minimum. The difference in population and size between Indianapolis and Denver does not seem to be such as to account for the fact that the net price at Denver is more than double what it is at Indianapolis, while the price actually paid is nearly treble.

Let us now take at random a few instances within the same States. In Arkansas the highest price, 15 cents per gallon, is charged at Hot Springs, with a population of 9,973, and the lowest, 11 cents per gallon, at Helena, with a population of 5,550. The former, with a population nearly twice as large as the latter, ought to have the advantage coming from larger sales, while both are so small in size that there can be no material difference in cartage. Oil

is supplied in both cases by the Waters-Pierce Oil Company, a branch of the Standard. The freight rate from Whiting to Little Rock, Ark., is 1.9 cents per gallon; the local difference in freight between Hot Springs and Helena cannot explain a difference in the price as high as 4 cents.

For New Jersey we have the following figures:

City.	Population.	Gross price per gallon.
Hoboken	59,364	\$0 07
Jersey City	206,433	08
Bayonne	32,722	08
Newark	246,070	08½

Why is the price not affected by the distance between Jersey City and Bayonne, whereas the same distance between Jersey City and Hoboken results in a difference of 1 cent on the price, and the greater distance between Jersey City and Newark adds only ½ cent? Why is the difference between the price at Hoboken and that at Newark as high as 1½ cents per gallon, exceeding the freight from Buffalo to points in New Hampshire or Vermont? These are queries for which neither the cost of cartage nor the size of the market seems to offer an adequate answer.

Taking the State of New York, at Buffalo, which is one of the great distributing centres, the price is 8 cents, whereas at Cohoes, a town with a population of 23,910, a few miles from Albany, it is 6½ cents. Albany is supplied from Buffalo, the freight rate is ¾ cent per gallon. Thus the reduction in favor of Cohoes amounts to 2¼ cents per gallon, or to more than 25 per cent of the price at Buffalo. It does not seem clear why the cost of distributing oil within the city of Buffalo should be as high as 2¼ cents per gallon, while the variation between Jersey City and Newark is only ½ cent.

In Virginia, the price at Norfolk, a seaport with a population of 46,624, is 9 cents, while at Winchester, an inland town with a population of 5,161, it is 6 cents per gallon. A difference of 3 cents could not well be accounted for by the cost of cartage within the city of Norfolk, when it is considered that the highest price in New York City, 9 cents, is only 2 cents in excess of the price at Rensselaerville,

Rensselaer County, which, like Winchester, enjoys the privileges of the "most favored" towns. The examples might be increased at pleasure.

The reason for these variations is evidently to be sought in local fluctuations of supply and demand. This explanation is directly corroborated by the testimony of Mr. Monnett, former attorney-general of Ohio. He submitted a table showing the Standard Oil Company's prices of kerosene from tank wagons on the same day in thirty towns in Michigan and Ohio, of which there were twelve where the Standard Oil Company had competition, and eighteen where it had the local market all to itself. In the former towns the price varied from $4\frac{3}{4}$ to $6\frac{1}{2}$ cents per gallon, whereas in the latter it stood at from $7\frac{3}{4}$ to $8\frac{3}{4}$ cents.¹³

An examination of the prices of Royal Baking Powder would simply duplicate what has been stated above. It is needless to inquire into the figures relating to sugar and salt, since it has been candidly admitted before the Commission on behalf of the American Sugar Refining Company and the National Salt Company that local discriminations are practiced to meet competition.¹⁴

The foregoing data seem to indicate that the prices charged by trusts for their products have little or no relation to the costs of production and distribution.

Where the combination controls the bulk of the output, competition will as a rule be only local. Within the domain of monopoly the level of prices will be determined by the mathematical rule of maximum and minimum: the price may be high or low, according to whether greater net results could be secured by smaller sales at higher prices, or by larger sales at lower prices. In markets of equal size, it would seem, the net price (*i. e.*, the selling price less the cost of transportation) would tend towards uniformity. Within the competitive field prices ought to be regulated, in the long run, by cost of production. The combination, however, enters as a disturbing factor. On the one hand, monopoly profits secured in some markets enable it to cut the prices below the normal competitive level in others. On the other hand, to recoup for the loss in the competitive market, the price may be raised even above the normal monopoly level where the market is controlled by the combination.

¹³ "Report of the Industrial Commission," Vol. I, Testimony, p. 317.

¹⁴ *Ibid*, Vol. I, Testimony, p. 118; Vol. XIII, p. 262.

The raise may perhaps reduce consumption; still a part of the supply would probably have to be diverted, in any event, from the non-competitive market, in order promptly to meet the increased demand at abnormally low prices in the competitive market; so the elements of the calculation being changed, the maximum returns would be produced by a new price.

Thus where a combination is in practical control of the output, competition of independent producers will not steady prices, but on the contrary will widen the range of price fluctuations beyond what they would be either under free competition, or under unrestrained monopoly.

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